

Invasive Exotic Weeds

What is a Native Species? A native or indigenous species is one that occurs in a particular place without the help of humans, which is not always easy to determine. An organism's home, or native range, is determined by a host of influences such as climate, geology, soils, hydrology, biological interactions, and natural dispersal. Creatures are dispersed within their natural ranges by various means including air, water, animals, and migrations. People have played an increasingly significant role in moving plants, animals and other organisms around the world, to places far beyond their likely natural dispersal ranges. And this is where the trouble lies!

What's an Exotic Species? An organism is considered exotic (alien, foreign, non-indigenous, non-native) when it has been introduced by humans to a location(s) outside its native or natural range. This designation applies to a species introduced from another continent, another ecosystem, and even another habitat within an ecosystem.

What Makes an Exotic Species Invasive? (When is a Guest a Pest?) Many non-native species exist in apparent harmony in environments where they were introduced. For example, a relatively small number of exotic plants (e.g., corn, wheat, rice, oats) form the basis of our agricultural industry and pose little to no known threat to our natural ecosystems. The most important aspect of an alien plant is how it responds to a new environment. An invasive species is one that displays rapid growth and spread, establishes over large areas, and persists. Invasiveness is characterized by robust vegetative growth, high reproductive rate, abundant seed production, high seed germination rate, and longevity. Some native plants exhibit invasive tendencies in certain situations.

How Bad Are Invasive Species?

Invasive species impact native plants, animals, and natural ecosystems by:

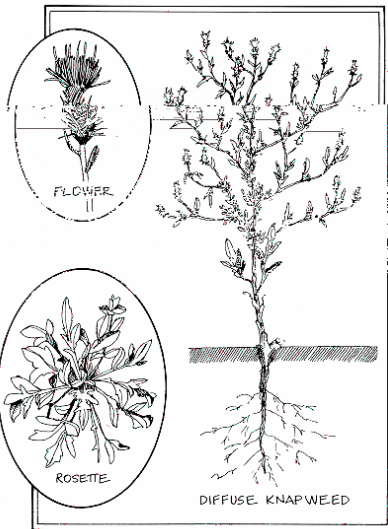
- Reducing biodiversity
- Altering hydrologic conditions
- Altering soil characteristics
- Altering fire intensity and frequency
- Interfering with natural succession
- Competing for pollinators
- Poisoning or repelling native insects
- Displacing rare plant species
- Increasing predation on nesting birds
- Serving as reservoirs of plant pathogens
- Replacing complex communities with single species monocultures
- Diluting the genetic composition of native species through hybridization

Definitions from Jil M. Swearingen, National Park Service, National Capital Region, Center for Urban Ecology. 3/23/2004

Why and how are **Dalmatian toadflax** (*Linaria dalmatica* (L.)) and **diffuse knapweed** (*Centaurea diffusa*) impacting the Coconino National Forest?



Dalmatian toadflax poses a **serious threat** to native plants and grasses and therefore the animals that depend on them. The weed forms dense stands eliminating native species by easily out-competing them for water. This reduces forage production, thereby reducing the carrying capacity of the land. The Dalmatian toadflax root system has the ability to increase over 400% in one year and is already common in California and the Northern Rockies. If not controlled this would further decrease biodiversity and foraging habitat for native wildlife species.



Diffuse knapweed is an invasive exotic plant species from Eurasia. It and other knapweed relatives have invaded millions of acres of natural lands in the western United States - and **Flagstaff is under attack!** Diffuse

knapweed is prominent in East Flagstaff and is moving westward. This is a highly competitive plant that can exclude desirable native species with a variety of tactics. It has a deep taproot for drought tolerance; produces abundant seed that are easily distributed through a "tumbleweed" action; contains allelopathic chemicals in its leaves poisoning plants in its path; and is downright undesirable with its spiny flowers and single-species stands resulting in reduced wildlife habitat and native plant diversity.

Coconino National Forest Herbicide Weed Treatments

For information about herbicide treatments please try the Forest Service's TOLL FREE LINE: 1-866-449-7809, or ADOT's Toll Free Line: 1-800-546-6591 for highway right-of-way treatments. See also, [SouthWest Vegetaion Management Association](#)